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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,076	10/13/2003	KianKeong Ooi	STL11367	4341

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EXAMINER

MERCEDES, DISMERY E

ART UNIT PAPER NUMBER

2627

DATE MAILED: 05/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,076

Applicant(s)

OOI ET AL.

Examiner

Dismery E. Mercedes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9, 10, 13, 15, 17, 18, 20-22, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 7-8, 11-12, 16, 19 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1,15 have been considered but are moot in view of the new ground(s) of rejection.
2. The indicated allowability of claims 6,9,11,17,20,24 is withdrawn in view of the newly discovered reference(s) to Greenberg and Codilian et al. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1-6,9-10,13,15,18,21,22 rejected under 35 U.S.C. 102(b) as being anticipated by Greenberg et al. (US 6,104,558).

As to Claim 1, Greenberg et al. discloses a method comprising a step (a) of determining a location within a cycle by reading a portion of a cyclic bit sequence (as depicted in Figs. 2 & 4, “210”), the bit sequence containing several interspersed bit-group sets (as depicted in Fig.4, “402”) that each contain a plurality of series that each consist of several consecutively-placed identical bit-groups (as depicted in Fig.5, four consecutively placed identical bit groups).

As to Claim 2, Greenberg et al. further discloses: (a1) reading several servo fields from a data surface, each of the servo fields consisting of a respective one of the bit-groups, an analog portion

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and a digital remainder portion; and (a2) deriving a sector number from the bit-groups and not from the digital remainder portion; the sector number being the determined location within the cycle (see figs.2 and figs.4-5).

As to Claim 3, Greenberg et al. further discloses of accessing a sector having a sector number, the sector number being the determined location within the cycle (as depicted in Fig.4).

As to Claim 4, Greenberg et al. further discloses of writing each of the bit-groups as a mutually adjacent plurality of bits within a respective servo field (as depicted in Fig.5).

As to Claim 5, Greenberg et al. further discloses selecting each of the sets so that each of the bit-groups in the set uniquely identifies the set (see figs.3 & 5; col.5, lines 59-61).

As to Claim 6, Greenberg et al. further discloses writing several of the series consecutively and so that the series each consist of exactly S consecutively-placed bit-groups, where $S > 3$ (see figs.4 and 5, wherein there are 4 consecutively-placed bit groups, which is greater than 3).

As to Claim 9, Greenberg et al. further discloses the determining step is completed within one disc revolution of activating the transducer that reads the cyclic sequence (col.8, lines 57-67, wherein once the sector number is determined during each revolution a counter is reset at the index mark).

As to Claim, 10, Greenberg et al. further discloses writing each of the bit-groups within a few nominal bit-lengths of a respective track identifier (as depicted in Fig.5 and col.8, lines 17-56).

As to Claim 13, Greenberg et al. further discloses detecting a plurality of inter-set transitions in the read portion of the bit sequence (as depicted in Fig.4, "servo burst").

As to Claim 15,18,21,22 are apparatus claims drawn to claims 1, 3 & 5 and are therefore rejected for similar reasons as set forth in the rejection of claims 1, 3 & 5, above.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 17,20,24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenberg et al. in view of Codilian et al. (US 6,934,114).

As to claims 17,20,24 Greenberg et al. discloses the apparatus of claims 15,18 and 22, but fails to specifically disclose the servo sectors occupying a total area A, the bit groups occupying a smaller area $B < 2\%$ of A. However, Codilian et al. discloses a reduced bit number wedge identification technique wherein a bit group (wedge ID) only uses 2 bits which is less than 2% of the total area of the servo sectors (col.7, lines 32-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to implement the technique as disclosed by Codilian et al. to the apparatus disclosed by Greenberg et al. the motivation being to increase the amount of disk space on the track utilized for storing data (see col.7, lines 43-48 of Codilian et al.).

Allowable Subject Matter

5. Claims 7-8,11-12,16,19,23 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note: claim 8 is allowable since the cited references fails to teach or

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suggest: *"in which the determining step (a) includes steps of (a1) assembling first and second disc surfaces into a co-rotating assembly so that the surfaces gave a significant angular misalignment, the second disc containing the cyclic bit sequence; (a2) measuring a first portion on the first disc or surface; (a3) reading the cyclic bit sequence portion from the second disc or surface; and (a4) determining the location based on a combination of the first position from the measuring step (a2) and the sequence portion from the reading step (a3)."* Claim 11, is allowable since the cited references fails to teach or suggest: *determining step (a) includes steps of: (a1) reading a bit pattern from a data surface containing the cyclic bit sequence; (a2) verifying that the bit pattern from the reading step (a1) is consistent with the bit sequence; and (a3) accepting the bit pattern as the read portion based on the verification step (a2).*

Claims 16,19,23 are allowable since the cited references fails to teach or suggest: *each of the bit-groups resides in a respective nominally-contiguous digital portion of a respective servo sector, each of the digital portions being bounded by two respective non-digital portions of the respective servo sector, each of the digital portions occupying a total area A, each of the bit-groups occupying a smaller area B that is at most about 15% of A.* Claim 7 is allowable since the cited references fails to disclose: *in which the determining step (a) includes a step (a1) of assembling a several data surfaces into a co-rotating assembly so that a pair of the data surfaces have a significant angular misalignment smaller than a predetermined threshold, at least one of the pair containing: the cyclic bit sequence.* Claim 7 is allowable since the cited references fails to disclose: *the determining step (a) includes a step (a1) of mounting two data surfaces so as to generate a significant angular misalignment therebetween, each of the data surfaces containing the cyclic bit sequence.*

Conclusion

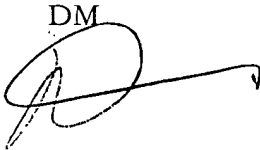
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Lapstun et al. (US 2004/0148558); Codilian et al. (US 6,952,322); Holsinger (US 2002/0057516); Dobbeck et al. (US 6,034,831).

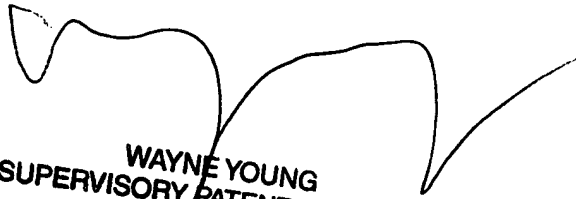
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dismery E. Mercedes whose telephone number is 571-272-7558. The examiner can normally be reached on Monday - Friday, from 9:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne R. Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DM



WAYNE YOUNG
SUPERVISORY PATENT EXAMINER